UDC 2500 Application Note

Alarms Set Up Group

Introduction

An alarm is an indication that an event that you have configured (for example—Process Variable) has exceeded one or more alarm limits. There are two alarms available. Each alarm has two setpoints. You can configure each of these two setpoints to alarm on various controller parameters.

There are two alarm output selections, High and Low. You can configure each setpoint to alarm either High or Low. These are called single alarms.

You can also configure the two setpoints to alarm on the same event and to alarm both high and low. A single adjustable Hysteresis of 0 % to 100 % is configurable for the alarm setpoint.

*See **Error! Reference source not found.** in the Installation section* for Alarm relay contact information.

The prompts for the Alarm Outputs appear whether or not the alarm relays are physically present. This allows the Alarm status to be shown on the display and/or sent via communications to a host computer.

Function Prompts

Table Error! No text of specified style in document.**-1 ALARMS Group (Numeric Code 1100) Function Prompts**

Function Prompt Lower Display		**Selection or Range of Setting** Upper Display		**Parameter Definition**
English	**Numeric Code**	**English**	**Numeric Code**	
A1S1TY	**1101**	NONE IN 1 IN 2 PROC DE OUT SHED E-ON E-OF MAN RSP FSAF PrRT	0 1 2 3 4 5 6 7 8 9 10 11 12	**ALARM 1 SETPOINT 1 TYPE**—Select what you want Setpoint 1 of Alarm 1 to represent. It can represent the Process Variable, Deviation, Input 1, Input 2, Output, and if you have a model with communications, you can configure the controller to alarm on SHED. If you have setpoint programming, you can alarm when a segment goes ON or OFF. **NO ALARM** **INPUT 1** **INPUT 2** **PROCESS VARIABLE** **DEVIATION** **OUTPUT** (NOTE 1) **SHED FROM COMMUNICATIONS** **EVENT ON (SP PROGRAMMING)** **EVENT OFF (SP PROGRAMMING)** **ALARM ON MANUAL MODE** (NOTE 2) **REMOTE SETPOINT** **FAILSAFE**

Function Prompt Lower Display		Selection or Range of Setting Upper Display		Parameter Definition
English	**Numeric Code**	**English**	**Numeric Code**	
		DI 1 DI 2 BRAK DE 2 TC W TC F	13 14 15 16 17 18	**PV RATE OF CHANGE** **DIGITAL INPUT 1 ACTUATED** (NOTE 7) **DIGITAL INPUT 2 ACTUATED (**NOTE 7) **LOOP BREAK** (NOTE 4) **DEVIATION FROM LSP 2** (NOTE 3) **THERMOCOUPLE WARNING** (NOTE 5) **THERMOCOUPLE FAILING** (NOTE 6) **ATTENTION** NOTE 1. When the controller is configured for Three Position Step Control, alarms set for Output will not function. NOTE 2. Not available if Timer is enabled because Alarm 1 is dedicated to Timer output. NOTE 3. This Deviation Alarm is based upon deviation from the 2nd Local Setpoint or Remote SP regardless of whichever SP is active. NOTE 4. Loop Break monitors the control loop to determine if it is working. When enabled, the control output is checked against the minimum and maximum output limit settings. When the output reaches one of these limits, a timer begins. If the timer expires and the output has not caused the PV to move by a pre-determined amount, then the alarm activates, thus signalling that the loop is broken. The timer value is automatically calculated for all control forms except On-Off control. For On-Off control, the loop break timer value must be configured by the operator as the AxSx VAL entry. This value is in seconds with a range of 0 to 3600 seconds. NOTE 5. Thermocouple Warning means that the instrument has detected that the Thermocouple Input is starting to fail. Not valid for other input types. NOTE 6. Thermocouple Failing means that the instrument has detected that the Thermocouple Input is in imminent danger of failing. Not valid for other input types.

Function Prompt Lower Display		Selection or Range of Setting Upper Display		Parameter Definition
English	**Numeric Code**	**English**	**Numeric Code**	
				NOTE 7: For the Digital Input selections, DI 1 can be either enabled or disabled in the Options Group (See Section **Error! Reference source not found.**), but DI 2 must be enabled in the Options Group for the alarm to function properly.
A1S1VA	**1102**	Value in engineering units		**ALARM 1 SETPOINT 1 VALUE**—This is the value at which you want the alarm type chosen in prompt A1S1TYPE to actuate. The value depends on what the setpoint has been configured to represent. No setpoint is required for alarms configured for Communications SHED. For SP Programming the value is the segment number for which the event applies. This prompt does not appear for "Alarm on Manual" type alarm. For example: A1S1TYPE = MANUAL.
A1S1HL	**1103**	HIGH LOW	0 1	***If Setpoint Programming is disabled or if the Alarm Type is not configured for Event On/Off:*** **ALARM 1 SETPOINT 1 STATE**—Select whether you want the alarm type chosen in prompt A1S1TYPE to alarm High or Low. **HIGH ALARM** **LOW ALARM**
A1S1EV	**1103**	BEGIN END	0 1	***If Setpoint Programming is enabled and if the Alarm Type is configured for Event On/Off:*** **ALARM 1 SEGMENT EVENT 1**—Select whether you want the alarm type chosen in prompt A1S1TYPE to alarm the beginning or end of a segment in setpoint Ramp/Soak programming. **BEGINNING OF SEGMENT** **END OF SEGMENT** **ATTENTION** Alarms configured for events will not operate on Setpoint Program segments of zero length.
A1S2TY	**1104**			**ALARM 1 SETPOINT 2 TYPE**—Select what you want Setpoint 2 of Alarm 1 to represent. The selections are the same as A1S1TYPE.

Function Prompt Lower Display		Selection or Range of Setting Upper Display		Parameter Definition
English	**Numeric Code**	**English**	**Numeric Code**	
A1S2VA	**1105**	Value in engineering units		**ALARM 1 SETPOINT 2 VALUE**—This is the value at which you want the alarm type chosen in prompt A1S2TYPE to actuate. The details are the same as A1S1 VAL.
A1S2HL	**1106**	HIGH LOW	0 1	**ALARM 1 SETPOINT 2 STATE**—Same as A1S1HL.
A1S2EV	**1106**	BEGIN END	0 1	**ALARM 1 SEGMENT EVENT 2**—Same as A1S1EV.
A2S1TY	**1107**			**ALARM 2 SETPOINT 1 TYPE**—Select what you want Setpoint 1 of Alarm 2 to represent. The selections are the same as A1S1TYPE. **ATTENTION** Not applicable with Relay Duplex unless using Dual Relay PWA.
A2S1VA	**1108**	Value in engineering units		**ALARM 2 SETPOINT 1 VALUE**—This is the value at which you want the alarm type chosen in prompt A2S1TYPE to actuate. The details are the same as A1S1 VAL.
A2S1HL	**1109**	HIGH LOW	0 1	**ALARM 2 SETPOINT 1 STATE**—Same as A1S1HL.
A2S1EV	**1109**	BEGIN END	0 1	**ALARM 2 SEGMENT EVENT 1**—Same as A1S1EV.
A2S2TY	**1110**			**ALARM 2 SETPOINT 2 TYPE**—Select what you want Setpoint 2 of Alarm 2 to represent. The selections are the same as A1S1TYPE. **ATTENTION** Not applicable with Relay Duplex unless using Dual Relay PWA.
A2S2VA	**1111**	Value in engineering units		**ALARM 2 SETPOINT 2 VALUE**—This is the value at which you want the alarm type chosen in prompt A2S2TYPE to actuate. The details are the same as A1S1 VAL.
A2S1HL	**1112**	HIGH LOW	0 1	**ALARM 2 SETPOINT 1 STATE**—Same as A1S1HL.
A2S1EV	**1112**	BEGIN END	0 1	**ALARM 2 SEGMENT EVENT 2**—Same as A1S1EV.

Function Prompt Lower Display		Selection or Range of Setting Upper Display		Parameter Definition
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ALHYST	**1113**	0.0 to 100.0 % of span or full output as appropriate		**ALARM HYSTERESIS**—A single adjustable hysteresis is provided on alarms such that when the alarm is OFF it activates at exactly the alarm setpoint; when the alarm is ON, it will not deactivate until the variable is 0.0 % to 100 % away from the alarm setpoint. Configure the hysteresis of the alarms based on INPUT signals as a % of input range span. Configure the hysteresis of the alarm based on OUTPUT signals as a % of the full scale output range.
ALARM1	**1114**	NO LAT LATCH	0 1	**LATCHING ALARM OUTPUT 1**—Alarm output 1 can be configured to be Latching or Non-latching. **NO LAT**—Non-latching **LATCH**—Latching **ATTENTION** When configured for latching, the alarm will stay active after the alarm condition ends until the RUN/HOLD key is pressed.
BLOCK	**1115**	DIS BK1 BK 2 BK12	0 1 2 3	**ALARM BLOCKING**—Prevents nuisance alarms when the controller is first powered up. The alarm is suppressed until the parameter gets to the non-alarm limit or band. Alarm blocking affects both alarm setpoints. **DISABLE**—Disables blocking **BLOCK 1**—Blocks alarm 1 only **BLOCK 2**—Blocks alarm 2 only **BLOCK12**—Blocks both alarms **ATTENTION** When enabled on power up or initial enabling via configuration, the alarm will not activate unless the parameter being monitored has not been in an alarm condition for a minimum of one control cycle (167 ms).
DIAGAL	**1116**		0 1	**DIAGNOSTIC**—Monitors the Current Output and/or Auxiliary Output for an open circuit condition. If either of these two outputs falls below about 3.5 mA, then an Alarm is activated. This configuration is in addition to whatever was selected for AxSxTYPE. **DISABLE**—Disables Diagnostic Alarm

Function Prompt Lower Display		Selection or Range of Setting Upper Display		Parameter Definition
English	**Numeric Code**	**English**	**Numeric Code**	
		DIS AL 1 AL 2	2	**ALARM 1**—Alarm 1 is diagnostic alarm **ALARM 2**—Alarm 2 is diagnostic alarm